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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,706	02/27/2004	Yung-Chang Chen		7577

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WEI TE CHUNG
FOXCONN INTERNATIONAL, INC.
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EXAMINER

JOLLEY, KIRSTEN

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 02/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/789,706

Applicant(s)

CHEN ET AL

Examiner

Kirsten C Jolley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. The claim objections have been withdrawn in response to Applicant's amendments to claim 8.
2. The 35 USC 102(b) rejections over Akram et al. have been withdrawn in response to Applicant's amendments because Akram et al. only teaches vibrating the substrate in a vertical direction (col. 5, lines 19-21).
3. Applicant's arguments filed December 9, 2004 have been fully considered but they are not persuasive.

With respect to the 35 USC 102(b) and 103(a) rejections over Chiu, Applicant argues that Chiu fails to teach or suggestion the limitation of "vibrating the substrate in horizontal directions", and that the mode and direction of the vibrating step in Chiu is different from the mode and direction of the vibrating step to which amended claim 1 is directed. The Examiner disagrees. While it is noted that Chiu uses an ultrasonic wave generator to vibrate the substrate, ultrasonic waves necessarily have both horizontal and vertical components, and therefore the substrate is vibrated in both horizontal and vertical directions. Applicant's use of broad "comprising" language is non-limiting and is inclusive of other steps or elements. In this case, the "comprising" language is inclusive of vibrating in other directions in addition to vibrating in horizontal directions. The claims are not limited to vibrating in horizontal directions *only*. The transitional term "comprising," which is synonymous with "including," "containing," or "characterized by," is inclusive or open-ended and does not exclude additional, unrecited

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elements or method steps. *Moleculon Research Corp. v. CBS, Inc.*, 793 F.2d 1261, 229 USPQ 805 (Fed. Cir. 1986); *In re Baxter*, 656 F.2d 679, 686, 210 USPQ 795, 803 (CCPA 1981); *Ex parte Davis*, 80 USPQ 448, 450 (Bd. App. 948) (“comprising” leaves “the claim open for the inclusion of unspecified ingredients even in major amounts”).

With respect to the 35 USC 103(a) rejections over Chiu in view of Takamori et al., Applicant argues that Takamori also fails to teach or suggest the limitation of vibrating the substrate in horizontal directions. It is noted that the Takamori et al. reference is applied merely for its teachings of supplying resist solution using one or more nozzles, including slit nozzles, and then spreading the resist solution by vibrating the substrate to make the film thickness uniform. Further, while it is noted that the Takamori et al. reference is not applied for its teaching of vibrating in horizontal directions, it is noted that the reference none-the-less teaches vibrating by oscillation, which is vibration in the horizontal direction.

With respect to the 35 USC 103(a) rejections over Minoura et al. in view of Chiu, Applicant argues that Minoura et al. also fails to teach or suggest the limitation of vibrating the substrate in horizontal directions. It is noted that the Minoura et al. reference is cited merely for its teaching of making an array having grooves/recesses and protrusions that are contiguous and parallel to each and which have a triangular cross section. The Chiu reference is applied for its teaching of vibrating in horizontal directions, as discussed above.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-2 and 7-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Chiu (US 5,858,475).

Chiu discloses a method for coating photoresist on a substrate comprising: forming grooves/recesses and protrusions on a substrate; applying photoresist on the substrate; and vibrating the substrate so that the photoresist forms a uniform coating over the grooves/recesses and protrusions (see Figures 3A-3B and col. 2, lines 26-32). Chiu uses an ultrasonic vibrator to vibrate the photoresist coating, and ultrasonic vibration waves would vibrate the substrate in both vertical and horizontal directions, therefore the process of Chiu meets the claimed limitation of vibrating the substrate in horizontal directions. The grooves in Figures 3A-3B appear to be parallel and contiguous to each other. Further, with respect to amended claim 7, the use of ultrasonic waves would be inclusive of vibrating in horizontal directions followed by vertical directions since waves have both horizontal and vertical components.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 4-5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiu as applied to claims 1-2 and 6-10 above, and further in view of Takamori et al. (US 6,635,113).

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The claims are rejected for the same reasons set forth in the prior Office action, as well as for the reasons discussed above in section 3.

8. Claims 1-3 and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Minoura et al. (US 2003/0053015) in view of Chiu.

The claims are rejected for the same reasons set forth in the prior Office action, as well as for the reasons discussed above in section 3.

9. Claims 1, 4, 8, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akram et al. (US 5,609,995) in view of Parodi et al. (US 5,798,140).

Akram et al. discloses a method of coating photoresist onto a substrate comprising: forming grooves/recesses and protrusions on a substrate; applying photoresist on the substrate; spinning the substrate; and then vibrating the substrate. Akram et al. illustrates spraying on the substrate in Figure 3. Akram et al. teaches that the substrate is vibrated in a vertical direction in col. 5, lines 19-21, however the reference as a whole is generally directed to vibrating the substrate in order to spread coating material to form an even coating over the substrate's uneven surface. One skilled in the art would have been motivated to look to the prior art for other means of vibrating a substrate in order to form an even resist coating layer. Parodi et al. is cited for its teaching of a process of vibrating a substrate in order to form a uniform coating layer. Parodi et al. teaches that the vibrating is performed by either oscillation or orbital rotation, both of which involve vibrating the substrate in the horizontal direction. It would have been obvious for one having ordinary skill in the art to have substituted the vibrating method of Parodi et al. for the

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vibration method in the process of Akram et al. with the expectation of similar and successful results since both references are similarly directed to vibrating a substrate to form an even resist coating layer.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kirsten C Jolley whose telephone number is 571-272-1421. The examiner can normally be reached on Monday to Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P Beck can be reached on 571-272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Kirsten C Jolley
Primary Examiner
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kcj